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09/892,599	06/27/2001	Tzuo-Chang Lee	06837-100001	2270

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EXAMINER

WARREN, MATTHEW E

ART UNIT PAPER NUMBER

2815

DATE MAILED: 01/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/892,599	LEE ET AL.	
	Examiner	Art Unit	
	Matthew E. Warren	2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 June 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Drawings***

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

The disclosure is objected to because of the following informalities: under the "Description of Drawings" and "Detailed Description" the brief description pertaining to figure 1 is not correct. Figure 1 is a block diagram of a prior art optical servo writer system. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, 12-15, 18-20, 22, 23, 28-31, and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al. (US Pub. 2002/0167751 A1).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

In re claim 1, Lee et al. shows (figs. 9 and 10) an optical servo writer system comprising: a laser (120) generating beams of collimated light; a lens (124) positioned to receive and focus the collimated light; and a spatial filter (125) positioned adjacent the lens to allow a subset (166) of the collimated light to pass through the filter.

In re claim 2, Lee et al. shows (fig. 9) an optical subsystem (122 and 123) positioned between the laser and the lens, the optical subsystem receiving the beams of collimated light and splitting the beams.

In re claim 3, Lee et al. discloses [0034] that the split beams comprise servo beams but does not explicitly disclose the ghost beams. However, since a spatial filter is needed to filter the split beam, the split beams must also comprise undesired beams to be filtered which will be interpreted as ghost beams.

In re claim 4, Lee et al. discloses [0034] that the subset is servo beams.

In re claim 5, Lee et al. shows (fig. 9) digital linear tape (10) positioned adjacent the spatial filter with the spatial filter allowing the subset of collimated light to hit the digital linear tape and produce servo marks.

In re claim 12, Lee et al. shows (fig. 9) an optical system for producing a plurality of servo marks on a digital linear tape comprises: a laser (120) generating beams of collimated light; an optical subsystem (123) positioned to receive the beams of collimated light and split the beams; a lens (124) positioned to receive and focus the split beams; and a spatial filter (125) positioned adjacent the lens to allow a subset of the split beams to pass through the filter.

In re claim 13, Lee et al. discloses [0034] that the split beams comprise servo beams but does not explicitly disclose the ghost beams. However, since a spatial filter is needed to filter the split beam, the split beams must also comprise undesired beams to be filtered which will be interpreted as ghost beams.

In re claim 14, Lee et al. discloses [0034] that the subset is the servo beams

In re claim 15, Lee et al. shows (fig. 9) wherein the servo beams hit the digital linear tape (10).

In re claim 18, Lee et al. discloses [0045] method for producing optical servo marks on a digital linear tape comprises: generating beams of collimated light in a laser; receiving and focusing the beams of collimated light in a lens; and filtering the beams of collimated light near the focus of the lens to allow a subset of the beams to pass through a filter and hit the digital linear tape.

In re claim 19, Lee et al. discloses [0034] that the split beams comprise servo beams but does not explicitly disclose the ghost beams. However, since a spatial filter is needed to filter the split beam, the split beams must also comprise undesired beams to be filtered which will be interpreted as ghost beams.

In re claim 20, Lee et al. discloses [0045] splitting is accomplished by passing the beams of collimated light through a diffractive optical element.

In re claim 22, Lee et al. discloses [0045] the subset of beams is the desired beams.

In re claim 23, Lee et al. discloses [0045] filtering comprises passing the beams of collimated light to a spatial filter (125).

In re claim 28, Lee et al. discloses (figs. 9 and 10) an optical servo writer system for a digital linear tape comprises: a laser optics system (120 and 122) generating beams of collimated light; a first lens (124) positioned to receive and focus the collimated light; a spatial filter (125) positioned adjacent the lens to allow a subset of the collimated light to be focused and pass through the filter; and a second lens (126) positioned to restore the subset into collimated beams that propagate towards a third lens (128)

In re claim 29, Lee et al. discloses [0034] that the split beams comprise servo beams but does not explicitly disclose the ghost beams. However, since a spatial filter is needed to filter the split beam, the split beams must also comprise undesired beams to be filtered which will be interpreted as ghost beams.

In re claim 30, Lee et al. discloses [0034] that the subset is servo beams.

In re claim 31, Lee et al. shows (fig. 9) that the third lens focuses the subset onto the digital linear tape producing servo marks.

In re claim 37, Lee et al. discloses [055] that the third lens is a scan lens. 19

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 1 is provisionally rejected under the judicially created doctrine of double patenting over claim 1 of copending Application No. 10/140,098 (Lee et al. US Pub 2002/0167751 A1). This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: claim 1 of Application 10/140,098 also recites an optical servo writer system comprising a laser generating beams of collimated light (w/ the DOE to split the beam into a linear array of beams), a lens positioned to receive and focus the light (lines 4 and 5) and a spatial filter

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positioned adjacent the lens to allow a subset of the collimated light to pass through the filter (lines 6-8).

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8, 12-16, 18-25, and 28-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's Prior Art Figure 1 (APAF) in view of Krantz (US 6,248,988 B1).

In re claim 1, the APAF shows an optical servo writer system comprising: a laser (12) generating beams of collimated light (24) and a lens (20) positioned to receive and focus the collimated light. The APAF shows all of the elements of the claims except the spatial filter. Krantz shows (fig. 3) a laser system in which a spatial filter (20) is positioned adjacent the lens to allow a subset of collimated light to pass through the lens (col. 9, lines 4-34). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the servo writer system of the

APAF by inserting a spatial filter adjacent a lens as taught by Krantz to reduce image noise generated by the laser beams.

In re claim 2, the APAF shows an optical subsystem (14 , 16, 18) positioned between the laser and the lens, the optical subsystem receiving the beams of collimated light and splitting the beams.

In re claim 3, the APAF shows that the split beams comprise servo beams (26) and ghost beams (28).

In re claim 4, the APAF shows that the subset is servo beams.

In re claim 5, the APAF shows digital linear tape (22) positioned adjacent the spatial filter with the spatial filter allowing the subset of collimated light to hit the digital linear tape and produce servo marks.

In re claim 6, the APAF shows that the optical subsystem comprises an attenuator (14) placed in proximity to a beam expander (16) and a diffractive optical element (18).

In re claim 7, the APAF already discloses (page 7) that a bi-prism is used to split the beams. The APAF does not disclose that several lenses are used to generate two beams to bring the light back together to form multiple spots on the tape. Krantz shows (fig. 3) that lenses (23 and 29) combine the split beams (83) and focus them back together by means of two beam interference.

In re claim 8, Krantz shows (fig. 3) that the spatial filter (20A) has a plurality of openings (76) to allow the subset of collimated light to pass through the filter.

In re claim 12, the APAF shows an optical system for producing a plurality of servo marks on a digital linear tape comprising a laser (12) generating beams of collimated light (24), an optical subsystem (14, 16, 18) positioned to receive the beams of collimated light and split the beams, and a lens (20) positioned to receive and focus the split beams. The APAF shows all of the elements of the claims except the spatial filter. Krantz shows (fig. 3) a laser system in which a spatial filter (20) is positioned adjacent the lens to allow a subset of collimated light to pass through the lens (col. 9, lines 4-34). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the servo writer system of the APAF by inserting a spatial filter adjacent a lens as taught by Krantz to reduce image noise generated by the laser beams.

In re claim 13, the APAF shows that the split beams comprise servo beams (26) and ghost beams (28).

In re claim 14, the APAF shows that the subset is the servo beams

In re claim 15, the APAF shows that the servo beams hit the digital linear tape (10).

In re claim 16, Krantz shows (fig. 3) that the spatial filter (20A) has a plurality of openings (76) to allow the subset of collimated light to pass through the filter.

In re claim 18, the APAF discloses (page 7) method for producing optical servo marks on a digital linear tape comprises generating beams of collimated light in a laser, and receiving and focusing the beams of collimated light in a lens. The APAF shows all of the elements of the claims except the filtering of the light. Krantz discloses a method

in which a spatial filter (20) is positioned adjacent the lens to allow a subset of collimated light to pass through the lens (col. 9, lines 4-34). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the servo writer system of the APAF by inserting a spatial filter adjacent a lens as taught by Krantz to reduce image noise generated by the laser beams.

In re claim 19, the APAF discloses (page 7) that the split beams comprise desired beams (26) and ghost beams (28).

In re claim 20, the APAF discloses (page 7) that splitting is accomplished by passing the beams of collimated light through a diffractive optical element.

In re claim 21, the APAF already discloses (page 7) that a bi-prism is used to split the beams. The APAF does not disclose that several lenses are used to generate two beams to bring the light back together to form multiple spots on the tape. Krantz shows (fig. 3) that lenses (23 and 29) combine the split beams (83) and focus them back together by means of two beam interference.

In re claim 22, the APAF discloses (page 7) that the subset of beams is the desired beams.

In re claim 23, Krantz discloses (col. 9, lines 4-34) that filtering comprises passing the beams of collimated light to a spatial filter (20).

In re claim 24, Krantz shows (fig. 3) that the spatial filter (20A) has a plurality of openings (76) to allow the subset of collimated light to pass through the filter.

In re claim 28, the APAF shows an optical servo writer system for a digital linear tape comprising a laser optics system (12) generating beams of collimated light, and a

first lens (20) positioned to receive and focus the collimated light. The APAF shows all of the elements of the claims except the spatial filter and the second lens to restore the subset towards a third lens. Krantz shows (fig. 3) a laser system in which a spatial filter (20) is positioned adjacent the lens to allow a subset of collimated light to pass through the lens (col. 9, lines 4-34). A second lens (23) receives the filtered light and restores the subset to into collimated beams (83) that propagate towards a third lens (29). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the servo writer system of the APAF by inserting a spatial filter adjacent a lens as taught by Krantz to reduce image noise generated by the laser beams.

In re claim 29, the APAF shows that the split beams comprise servo beams (26) and ghost beams (28).

In re claim 30, the APAF shows that the subset is servo beams (26).

In re claim 31, the APAF already shows that a lens focuses non filtered beams onto the digital linear tape producing servo marks. The APAF does not disclose the third lens for focusing. Krantz shows (fig. 3) that the third lens focuses the subset after filtering the beams onto an object.

In re claim 32, the APAF shows that the optical subsystem comprises an attenuator (14) placed in proximity to a beam expander (16) and a diffractive optical element (18).

In re claim 33, the APAF already discloses (page 7) that a bi-prism is used to split the beams. The APAF does not disclose that several lenses are used to generate

two beams to bring the light back together to form multiple spots on the tape. Krantz shows (fig. 3) that lenses (23 and 29) combine the split beams (83) and focus them back together by means of two beam interference.

In re claim 34, Krantz shows (fig. 3) that the spatial filter (20A) includes a plurality of openings (76) positioned to allow the subset through the spatial filter.

In re claims 35 and 36, Krantz shows (fig. 3) that the first (23) and second lens (29) is a planar convex lens.

In re claim 37, the APAF discloses (page 7) that the object lens (20) may be a scan lens. Therefore, the invention of the APAF may be combined with the invention of Krantz to include the third lens of Krantz being a scan lens.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9, 10, 17, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over the APAF in view of Krantz as applied to claims 1, 5, 8, 12, 16, 18, 23, and 24 above, and further in view of Ina (US 4,669,883).

In re claims 9, 10, 17, and 27 the APAF in view of Krantz shows all of the elements of the claims except the openings positioned to prevent debris from clogging the openings or the openings being staggered. Ina shows (fig. 3) a spatial filter (6)

having apertures formed in staggered positions. The staggered positions would be relative to the plane perpendicular to the tape if the filter is formed adjacent and parallel to the tape. The filter inherently prevents clogging since the openings are staggered like the instant invention. The configuration of the spatial filter having staggered apertures reduces eliminates ghosts and ultimately improves the signal to noise ratio (col. 2, lines 6-40). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the spatial filter of the APAF and Krantz by adding staggered apertures as taught by Ina to improve the signal to noise ratio of the laser system.

Claims 11, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over the APAF in view of Krantz as applied to claims 1, 16, 18, 23, and 24 above, and further in view of Temple et al. (US 6,228,311 B1).

The APAF in view of Krantz shows all of the elements of the claims except the ablation of the spatial filter and the openings of the filter formed in situ which Temple et al. discloses (col. 8, lines 43-60) to form the apertures accurately. Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to modify the spatial filter of the APAF and Krantz by generating apertures in situ in an ablation process as taught by Temple to accurately form the apertures.

***Conclusion***


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Miyagawa (JP 63-136018) also shows that a spatial filter is used to eliminate ghosts in a laser system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew E. Warren whose telephone number is (703) 305-0760. The examiner can normally be reached on Mon-Thurs, and alternating Fri, 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (703) 308-2772. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Matthew E. Warren

  
December 14, 2003